

## CLAIMS

1) A device for detecting the corrosion induced by a medium, characterized in that it comprises a chamber (5) closed by a closing disc (4) made of such a material that said disc becomes permeable to said medium once corroded by said medium, and means for  
5 measuring the refractive index of the fluid present in the chamber.

2) A device as claimed in claim 1, wherein said measuring means comprise a light source (10) and a photodetector (11).

3) A device as claimed in any one of <sup>Multiple</sup> claims 1 or 2, wherein said refractive index measuring means comprise at least one optical fibre portion.

10 4) A device as claimed in claim 3, wherein one end of the optical fibre is close to the disc.

5) A device as claimed in <sup>multiple depends on multiple</sup> any one of the previous claims, wherein said chamber contains air.

6) A device as claimed in <sup>multiple</sup> any one of the previous claims, wherein said disc is  
15 connected to a support withstanding the pressure of the corrosive medium.

7) A device as claimed in claim 6, wherein said support is permeable to said medium.

8) A device as claimed in any one of claims 1 to 5, comprising means for balancing the pressure on either side of said disc.

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9) A device as claimed in <sup>multiple</sup> any one of the previous claims, wherein the refractive index measuring means are included in said chamber.

10) A device as claimed in claim 9, comprising at least one of the following measurement transmission means:

- 5    - waves (radio, ultrasonic, electromagnetic),  
      - optical fibre,  
      - electric conductor.